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A revision of the Afrotropical tracheline sac spider genus *Thysanina* Simon, 1910 (Araneae: Corinnidae)

Robin Lyle and **Charles R. Haddad***

Department of Zoology and Entomology, University of the Free State, P.O. Box 339,
Bloemfontein, 9300 South Africa; lyler.sci@mail.uovs.ac.za,
haddadcr.sci@mail.uovs.ac.za
*Author for correspondence

ABSTRACT

The dark sac spider subfamily Trachelinae (Araneae: Corinnidae) is currently represented in the Afrotropical region by eight genera: *Austrachelas* Lawrence, 1938, *Brachyphaea* Simon, 1895, *Cetonana* Strand, 1929, *Paccius* Simon, 1898, *Pronophaea* Simon, 1897, *Spinotrachelas* Haddad, 2006, *Thysanina* Simon, 1910 and *Trachelas* L. Koch, 1866. In the first revisionary paper on the group, of the monotypic genus *Thysanina*, the type species, *T. serica* Simon, 1910, is redescribed and five new species are described from Namibia, South Africa and Tanzania. The genus is endemic to the Afrotropical region and occurs to the south of Tanzania, predominantly in southern Africa. The majority of specimens were collected in low vegetation (grasses and short bushes) or on the ground surface, but some species are occasionally found in trees.

KEY WORDS: Araneae, Corinnidae, Trachelinae, *Thysanina*, spiders, new species, systematics.

INTRODUCTION

The family Corinnidae (Arachnida: Araneae) is poorly studied in the Afrotropical region. It consists of four subfamilies, namely Castianeirinae, Corinninae, Phrurolithinae and Trachelinae. Corinnids are wandering spiders that are often found in leaf litter and debris, with many species imitating ants and mutillid wasps (Dippenaar-Schoeman & Jocqué 1997; Bosselaers & Jocqué 2002).

Simon (1910) described the monotypic genus *Thysanina,* with *T. serica* Simon, 1910 as the type species, and placed it in the Clubionidae: Liocraninae. *Thysanina* remained in Clubionidae despite the subfamily Liocraninae being elevated to family status by Lehtinen (1967). Subsequently, Brignoli (1983) and Platnick (1989) placed the genus in the Liocranidae *incertae sedis*. *Thysanina* was recently transferred to Corinnidae: Trachelinae by Bosselaers and Jocqué (2000), due to the presence of distinctive ventral cusps on the anterior pairs of legs of males.

Trachelines can generally be characterised by the complete absence of leg spines and the presence, at least in males, of ventral cusps on the last three segments of the anterior legs (Platnick & Shadab 1974). Within the Afrotropical fauna, cusps are found in the genera *Thysanina*, *Trachelas* L. Koch, 1866, *Paccius* Simon, 1898, *Cetonana* Strand, 1929 and *Spinotrachelas* Haddad, 2006, but are lacking in *Austrachelas* Lawrence, 1938 and are replaced by leg spines in *Brachyphaea* Simon, 1895 and *Pronophaea* Simon, 1897. The latter two genera are misplaced and belong in the Corinninae, while *Austrachelas* should be transferred to the Gallieniellidae (Haddad & Lyle, in prep.). The cusp arrangement in *Cetonana* is similar to that of *Thysanina* (Bosselaers & Jocqué 2000), but the two genera differ, amongst others, in the length and shape of the cusps. *Cetonana* have long elongate cusps, while *Thysanina* have shorter and more compact cusps. *Thysanina* also have a greater number and larger cusps than Afrotropical

Trachelas, some species of which lack cusps in both sexes, while others have a few cusps usually on the tibiae and metatarsi of males only.

In the current paper, the second in a series on the Afrotropical tracheline fauna (Haddad 2006), the genus *Thysanina* is revised, the type species, *T. serica,* is redescribed, and five new species are described from Namibia, South Africa and Tanzania. *Thysanina* species appear to prefer low-growing foliage (grass, bushes and short shrubs) or are active on the ground surface, but are occasionally collected from trees.

MATERIAL AND METHODS

All specimens were observed for descriptions in 70% ethanol using a light microscope. Epigynes and palps were dissected from the respective specimens using 0-size insect pins. All dissected epigynes were cleared for eight minutes in a Branson 3200 ultrasonic bath in 70% ethanol, and drawn in 70% ethanol.

All measurements are given in millimetres. Body measurements (excluding legs) were determined for the smallest and largest specimens of both sexes found in the examined material, and a range of extremes was given for each sex. The leg measurements and eye distances are given for the largest specimen of each sex. Leg spination follows the format of Bosselaers & Jocqué (2000). The locality coordinates of specimens are provided, when available.

Measurements and leg spination are abbreviated as follows:

AER – anterior eye row
AL – abdomen length
ALE – anterior lateral eye
AME – anterior median eye
AW – abdomen width
CL – carapace length
CW – carapace width
do – dorsal
FL – fovea length
PER – posterior eye row
pl – prolateral
PLE – posterior lateral eye
plv – prolateral ventral
PME – posterior median eye
rl – retrolateral
rlv – retrolateral ventral
SL – sternum length
SW – sternum width
TL – total length
vt – ventral terminal.

Material for scanning electron microscopy was dehydrated in a graded ethanol series and then critical-point dried in an argon chamber. Specimens were mounted on stubs, sputter-coated three times with gold, and then studied in a JEOL WinSEM at 10 kV. Digitised micrographs were taken.

The material used in the revision was obtained from the following collections (curators are named in parenthesis):

CAS – California Academy of Sciences, San Francisco, U.S.A. (C. Griswold).
MNHN – Museum National d'Histoire Naturelle, Paris, France (C. Rollard).
NCA – National Collection of Arachnida, ARC–PPRI, Pretoria, South Africa (A. Dippenaar-Schoeman).
NMBA – National Museum, Bloemfontein, South Africa (L. Lotz).
NMSA – Natal Museum, Pietermaritzburg, South Africa (J. Baijoo).
SMN – State Museum of Namibia, Windhoek, Namibia (T. Bird).

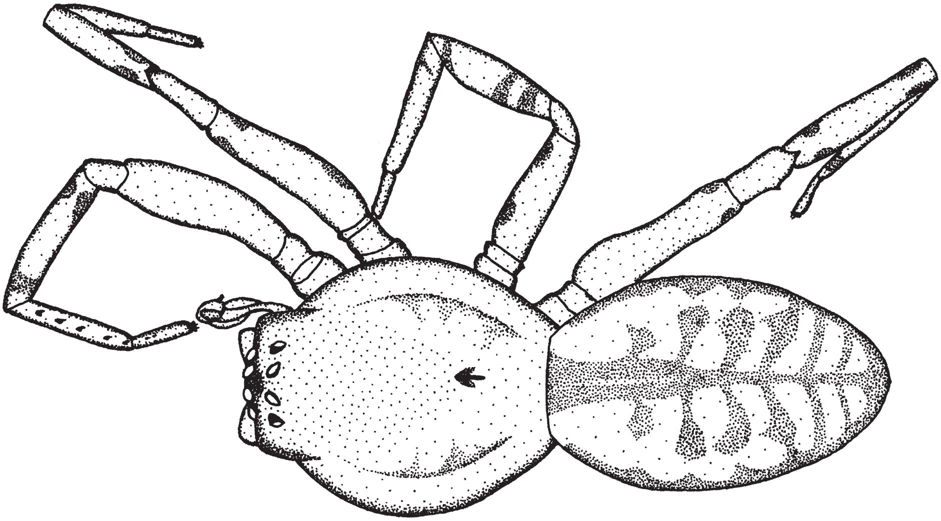


Fig. 1. General appearance of *Thysanina serica* Simon, 1910.

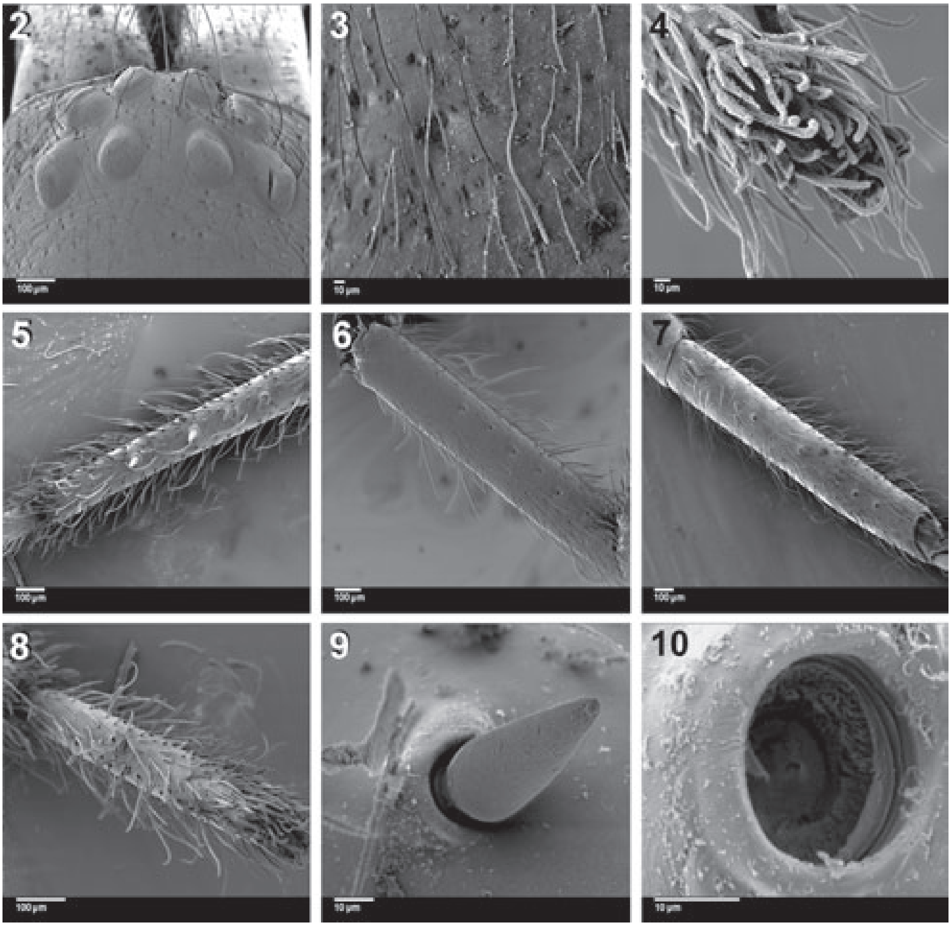
TAXONOMY

Thysanina Simon, 1910

Type species: *Thysanina serica* Simon, 1910.

Diagnosis: The genus *Thysanina* differs from the closely related *Trachelas* in several respects. *Thysanina* has a darkened eye region and slightly flattened yellow-brown carapace with a finely wrinkled surface, which appears smooth. The abdomen is creamy white to pale yellow, usually with a distinctive chevron marking (Fig. 1). *Trachelas* often have a raised red-brown carapace with a number of small tubercles covering it, making the surface texture appear granular and rough (Platnick & Shadab 1974; pers. observ.). The most obvious difference between the two genera is the variation in cusp presence, and the abdomen, which is grey in colour usually without a chevron marking in *Trachelas*. *Thysanina* males have ventral peg-like cups with pointed tips present on the tibiae, metatarsi and tarsi of the anterior legs, but cusps are absent in females. The occurrence of cusps is irregular in Afrotropical *Trachelas*; some species have cusps in both sexes, others in males only, while some species have a total absence of cusps. When present, the cusps are usually smaller and more robust than those found in *Thysanina*, and have rounded tips (e.g. Platnick & Shadab 1974, figs 42, 43). The copulatory openings of the female epigyne are situated in the anterior half of the epigyne, and the embolus of the male palp typically originates distally or prolaterally on the tegulum, and may be coiled or straight.

Description: Small to medium sized spiders, 3.0–5.5 mm in length; male more robustly built than female, with legs and abdomen thicker and more compact than female. Carapace slightly dorso-ventrally flattened, narrowest at ocular region, broader medially and rounded posteriorly (Fig. 1); ocular region darkened with dark rings around eyes; anterior eye row slightly procurved, posterior eye row slightly recurved (Figs 1, 2);



Figs 2–10. Scanning electron micrographs of male *Thysanina transversa* sp. n.: (2) eye region; (3) fine setae on smooth carapace surface; (4) paired tarsal claws covered by dense claw tuft; (5) metatarsus I with ventral cusps; (6) tibia I with ventral cusps; (7) metatarsus II with larger ventral cusps; (8) tarsus II with ventral cusps, located between dense setae; (9) structure of peg-like cusps found on the anterior legs; (10) cusp socket in integument.

colouration yellow brown to bright orange; covered with fine setae (Fig. 3). Chelicerae usually with three teeth on promargin, and two or three teeth on retromargin; endites 1.5 times longer than wide, sometimes with shallow longitudinal ridge along prolateral margin; straight on anterior and retrolateral margins, rounded on posterior margin; serrula indistinct; labium trapezoidal, slightly longer than wide. Sternum longer than broad, with smooth surface; long and short setae scattered across surface; colouration bright orange to brown, darker towards border. Legs with paired tarsal claws situated in between a dense claw tuft (Fig. 4); cusps present in males and absent in females, found on tibia, metatarsus and tarsus (Figs 5–8); cusps with a peg-like structure and pointed tips (Fig. 9), situated within deep sockets (Fig. 10); leg spines generally absent, but present in *T. similis* and *T. transversa*; legs I to IV typically with grey bands; metatarsi III and IV of both sexes with distal ventral preening comb.

Abdomen broader anteriorly and truncated posteriorly; integument with pale yellow to creamy white undertones, with a grey chevron marking usually present, except in *T. similis* females; chevron more distinct in males; dorsal scutum and inframamillary sclerite absent in both sexes. Female with paired copulatory openings in weakly sclerotised epigyne; epigyne structure varies greatly between species. Male palps vary greatly between species, with considerable variations in size and structure of tibial apophyses.

Key to the genus *Thysanina*

1 Males 2
– Females 7

2 Embolus long, wire-like, originating proximally on tegulum; palpal tibia with large, spoon-like dorsolateral apophysis .... **gracilis** sp. n.
– Embolus curved, coiled or peg-like, originating distally on tegulum; palpal tibial apophyses small, situated retrolaterally 3

3 Palpal tegulum truncated distally; embolus short, peg-like; leg II lacking cusps .. .. **capensis** sp. n.
– Palpal tegulum broad distally; embolus long, either curved or coiled; leg II with well developed cusps on metatarsi and tarsi 4

4 Palpal cymbium with distinctive tuft of setae retrolaterally (Fig. 20); embolus tip tear-shaped .... **absolvo** sp. n.
– Palpal cymbium without retrolateral setal tuft; embolus tip sharp and pointed ... 5

5 Cymbium broad at distal end (Fig. 12); embolus originating retrolaterally at distal end of tegulum, forming one complete coil .... *serica* Simon
– Cymbium tapering distally (Figs 32, 39); embolus originating medially or prolaterally at distal end of tegulum, curved, but not forming a complete coil 6

6 Palpal patella with broad, flattened retrolateral apophysis; embolus originating prolaterally on tegulum, short, only extending to midpoint of cymbium (Fig. 32) .... **similis** sp. n.
– Palpal patella with pointed triangular retrolateral apophysis; embolus originating medially on tegulum, longer, extending to retrolateral margin of cymbium (Fig. 39) .... **transversa** sp. n.

7 Copulatory openings looped, situated anteriorly in epigyne; spermathecae very large and bean-shaped, occupying the posterior 0.75 of the epigyne .... **absolvo** sp. n.
– Copulatory openings variable; spermathecae smaller, not occupying more than half of the epigyne length 8

8 Epigyne with large anteromedian hood; copulatory openings small, situated medially near posterior end of hood (Fig. 29) .... **gracilis** sp. n.
– Epigyne without anteromedian hood; copulatory openings larger, situated within oblique hoods or comma-shaped or oblique ridges 9

9 Copulatory openings situated within comma-shaped ridges that touch medially; spermathecae situated anteriorly, touching along median margin, occupying approximately half epigyne length .... *serica* Simon

– Copulatory openings situated within oblique hoods or ridges; structure and size of spermathecae variable 10

10 Copulatory openings situated in oblique ridges, at approximately half epigyne length (Fig. 21); spermathecae and terminal receptacles situated anteriorly in epigyne; spermathecae touching along median margins .... **capensis** sp. n.

– Copulatory openings situated within weakly sclerotised hoods, laterally and anterior in epigyne; spermathecae small, roughly kidney-shaped 11

11 Epigynal hoods extending approximately half of epigyne length; spermathecae with a distinctive median constriction (Fig. 36); abdomen with distinctive chevron marking; distributed in South Africa .... **transversa** sp. n.

– Epigynal hoods extending to a third of epigyne length; spermathecae lacking a distinctive median constriction; abdomen without chevron marking, replaced by a grey median stripe; distributed in Tanzania .... **similis** sp. n.

Thysanina serica Simon, 1910

Figs 1, 11–15

Thysanina serica: Simon 1910: 201–202.
T. serica: Bosselaers & Jocqué 2000: 311, figs 2a–e.

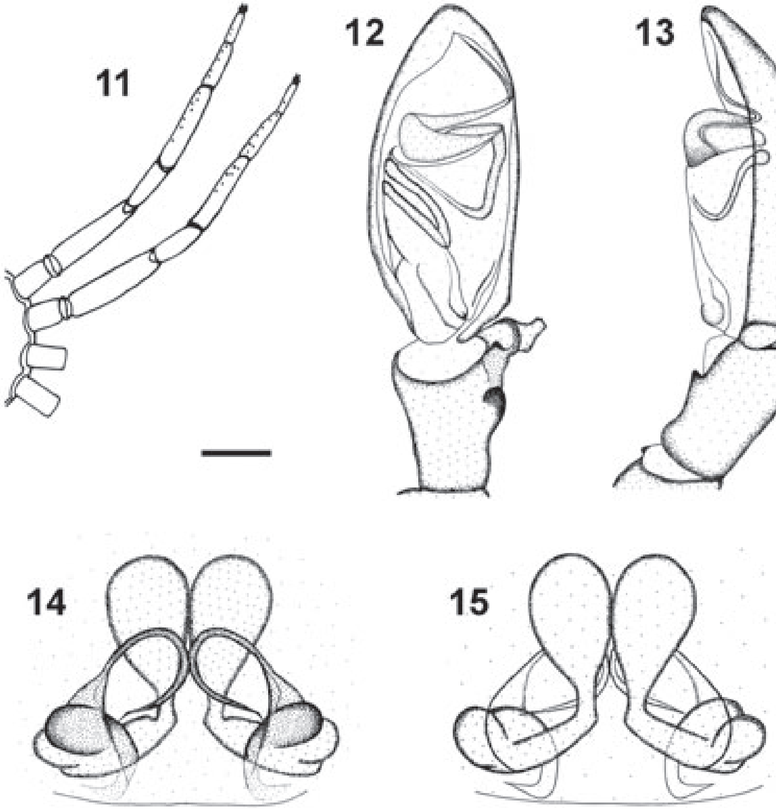
Diagnosis: This species is recognised from others by the coiled embolus, the elongated cymbium and the subtriangular retrolateral tibial apophysis of the male palp. The female can be recognised by the large globular spermathecae that have posterolateral bilobed terminal receptacles, and the comma-shaped ridges in which the copulatory openings are found.

Redescription:

Male.

Measurements: CL 1.68–2.5, CW 1.45–2.0, AL 1.88–3.0, AW 1.23–1.8, TL 3.5–5.2, FL 0.9–1.15, SL 0.98–1.48, SW 0.73–1.1, AME–AME 0.10, AME–ALE 0.03, ALE–ALE 0.36, PME–PME 0.13, PME–PLE 0.14, PLE–PLE 0.59. Length of leg segments (sequence from femur to tarsus, and total): I 2.5+1.18+2.0+1.65+1.0=8.33; II 2.08+1.05+1.68+1.25+0.75=6.81; III 1.75+0.88+1.18+1.58+0.55=5.94; IV 2.4+1.0+2.05+1.73+0.55=7.73.

Carapace declining gradually towards midpoint; declining sharply posterior to midpoint; surface smooth; covered in short, fine setae throughout; fovea large, distinct; carapace bright orange to brown; ocular region dark orange to light brown. All eyes with black rings; AER slightly procurved, median eyes slightly larger than laterals; clypeus height equal to ALE diameter; AME separated by distance slightly smaller than their diameter; AME separated from ALE by 0.25 AME diameter; PER slightly recurved, median eyes slightly larger than laterals; PME separated by distance equal to distance from PME to PLE. Chelicerae dark orange, with black setae scattered on anterior surface; three promarginal teeth, median largest; three retromarginal teeth, smallest near to fang base. Sternum orange, dark orange at border; fine, long setae scattered throughout sternum. Abdomen oval-elongate, broader anteriorly, truncated posteriorly; dorsum white to grey with fine, short setae throughout; partial grey chevron marking on dorsum. Legs I to IV uniform yellow to pale orange; dense short, black setae ventrally



Figs 11–15. *Thysanina serica* Simon, 1910: (11–13) male: (11) schematic representation of cusp arrangement on legs I and II, (12) left palp, ventral view, (13) left palp, retrolateral view; (14, 15) female: (14) epigyne, ventral view, (15) vulva, dorsal view. Scale bar (Figs 12–15) = 0.1 mm.

on tibiae, metatarsi and tarsi; fine pale setae on all segments of legs I to IV; legs I to IV with uniform incomplete bands ventrally, grey in colour; femora with two close distal bands, patellae covered almost entirely by band, tibiae, metatarsi each with single distal and proximal bands. Leg spination: tibiae: I *plv* 7 cusps, II *plv* 5, *rlv* 1 cusps; metatarsi: I *plv* 5 cusps, II *plv* 6, *rlv* 1 cusps; tarsi: I *plv* 2 cusps, II *plv* 1 cusp (Fig. 11); regular leg spines absent; palpal spination: femora: *pl* 1 *do* 1, tarsus *do* 1. Palp pale yellow throughout; tegulum elongate, with coiled distal embolus; small, subtriangular retrolateral tibial apophysis present (Figs 12, 13).

Description:

Female.

Measurements: CL 1.72–2.05, CW 1.68–2.0, AL 3.2–3.4, AW 2.25–2.35, TL 5.1–5.4, FL 0.28–0.35, SL 1.23–1.3, SW 0.88–0.95, AME–AME 0.14, AME–ALE 0.05, ALE–ALE 0.45, PME–PME 0.17, PME–PLE 0.16, PLE–PLE 0.64. Length of leg segments (sequence from femur to tarsus, and total): I 2.0+0.9+1.53+1.33+0.9=6.66; II 1.55+0.8+1.35+1.23+0.88=5.81; III 1.1+0.88+1.73+1.23+0.53=5.47; IV 2.15+0.9+1.6+1.88+0.68=7.21.

General appearance similar to male; female larger than male; body paler, with lighter grey chevron comprising thin median line with pale transverse branches. Eye region yellow-orange, eyes surrounded by dark brown rings; AER very slightly recurved, median eyes larger than laterals; clypeus height equal to distance 0.75 AME diameter; AME separated by 0.75 their diameter, AME separated from ALE by distance equal to 0.5 AME diameter; PER recurved, eyes subequal in size; PME separated by 1.75 their diameter, PME separated from PLE by 1.75 PME diameter. Chelicerae with three well separated promarginal teeth, median largest, distal smallest; retromargin with two closely situated teeth, subequal in size. Legs I to IV similar in colouration to male, with incomplete bands; legs less robust than those of male. Regular leg spines, cusps absent; palpal spination: femora *plv* 1 *rlv* 1, tibiae *plv* 3 *rlv* 3. Genital area sclerotised; dark brown; copulatory openings situated laterally in epigyne, within sclerotised comma-shaped ridges; entrance ducts curving anteriorly to median spermathecae; spermathecae large, oval structures, with posterolateral bilobed terminal receptacles (Figs 14, 15).

Syntype: ♂ deposited in MNHN (examined). Accompanying label stating 'Museum Paris AR 14437 / Thysanina serica Simon / Namibia Lüderitz-Buch / Schultze leg. Simon det. & coll.' The female syntype specimen, deposited in the Zoological Museum, Berlin, could not be traced and is probably lost.*

Other material examined: NAMIBIA: 2♂ between Chameis Head & South Rock, 27°51'S:15°39'E, 4.viii.1997, ground at night, E. Griffin (SMN 43802); 1♀ same locality, 6.viii.1997, E. Griffin (SMN 43799); 1♀ dunes behind Agate Beach, 6km N of Luderitz, 26°35'S:15°10'E, 9.x.1984, C.E. Griswold & T. Meikle-Griswold (NMSA); 1♂ 1♀ Omaruru River Mouth, 22°05'S:14°14'E, 17.ii.1969, B.H. Lamoral (NMSA); 2♂ sand dunes E of Swakopmund, 22°40'S:14°31'E, 10.ii.1969, B. Lamoral & R. Day (NMSA). SOUTH AFRICA: *Gauteng*: 1♂ Roodeplaat Dam Nature Reserve, 13.xi.1980, sweep net, M. Stiller (NCA 81/901).

Distribution: Distributed in western Namibia and Gauteng Province of South Africa (Fig. 41).

Natural history: The natural history of this species is poorly known. It occurs in arid habitats in western Namibia and savannah in Gauteng Province, South Africa. Specimens were collected from the ground surface and grass. No distinctive activity pattern could be distinguished, as specimens were collected by day and by night.

Thysanina absolvo sp. n.

Figs 16–20

Etymology: This species name is Latin for 'free', taken from the *terra typica*, Free State Province in South Africa, where the entire type series was collected.

Diagnosis: This species can be recognised from others by the retrolateral hair tuft and the uniquely curved embolus of the male palp. The female can be recognised by the very large bean-shaped spermathecae and looped entrance ducts.

Description:

Female.

Measurements: CL 1.23–1.53, CW 1.15–1.48, AL 1.95–1.48, AW 1.45–1.8, TL 3.3–3.8, FL 0.11–0.12, SL 0.78–0.88, SW 0.73–0.83, AME–AME 0.08, AME–ALE 0.05, ALE–ALE 0.32, PME–PME 0.12, PME–PLE 0.09, PLE–PLE 0.45. Length of leg segments

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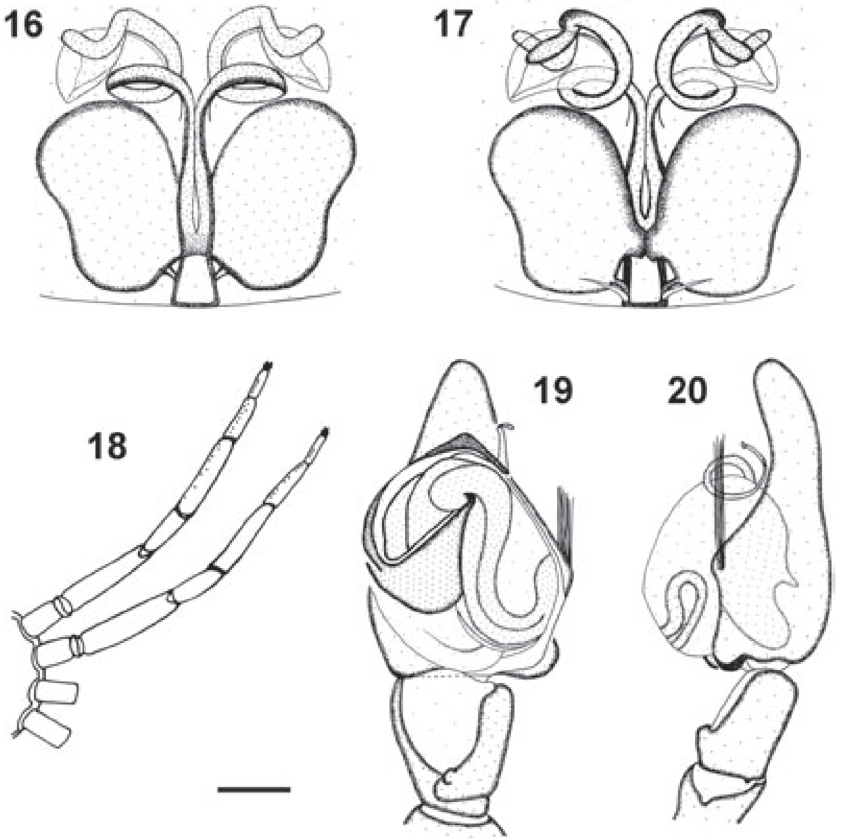
* The female syntype was examined by Dr Martin Ramírez (Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina) during 2001, and his sketches of the female epigyne correspond adequately with those provided for this species here.



Figs 16–20. *Thysanina absolvo* sp. n.: (16, 17) female: (16) epigyne, ventral view, (17) vulva, dorsal view; (18–20) male: (18) schematic representation of cusp arrangement on legs I and II, (19) left palp, ventral view, (20) left palp, retrolateral view. Scale bar (Figs 16, 17, 19, 20) = 0.1 mm.

(sequence from femur to tarsus, and total): I 1.4+0.7+1.25+0.9+0.53=4.78; II 1.2+0.63+0.9+0.78+0.3=3.81; III 0.9+0.45+0.58+0.78+0.23=2.94; IV 1.45+0.63+1.2+1.23+0.3=4.81.

First three quarters of carapace evenly high, with relatively steep decline in last quarter; surface smooth, covered in short setae; fovea small, distinct, at two-thirds carapace length; carapace orange to brown in colour. Ocular region dark orange to brown with dark brown to black rings around eyes; AER slightly procurved, lateral eyes very slightly larger than medians; clypeus height equal to AME diameter; AME separated by distance equal to their diameter; AME separated from ALE by 0.25 AME diameter; PER slightly recurved, median eyes larger than laterals; PME separated by distance equal to their diameter, PME separated from PLE by slightly less than PLE diameter. Chelicerae dark orange to brown, slightly paler near fang base; scattered black setae on anterior surface; longer setae towards fang base; three promarginal teeth, two large, subequal in size, near fang base; third tooth small, far from fang base on promargin; three retromarginal teeth, equal in size, on single base. Sternum orange, brown towards border; long brown setae scattered on sternum. Abdomen broader anteriorly, truncated posteriorly; dorsum creamy white; grey chevron with darkened median line, light grey transverse branches dorsally, dark grey lines laterally; surface smooth with short fine setae throughout. Legs I to IV yellow to orange; tibiae, metatarsi and tarsi with dense long, dark setae ventrally; remaining leg segments covered in fine, less dense setae. Regular leg spines, cusps absent; palpal spination: patellae *pl* 2, tibiae *pl* 1. Genital area sclerotised, dark brown; copulatory openings in curved depression, situated anteromedially in epigyne near looped entrance ducts; spermathecae very large, bean-shaped, with darkened terminal receptacles situated anteriorly (Figs 16, 17).

Male.

Measurements: CL 1.7–1.73, CW 1.5–1.55, AL 1.9–2.2, AW 1.3–1.55, TL 3.63–3.9, FL 0.1–0.11, SL 0.98–1.05, SW 0.8–0.9, AME–AME 0.01, AME–ALE 0.03, ALE–ALE 0.3, PME–PME 0.1, PME–PLE 0.05, PLE–PLE 0.4. Length of leg segments (sequence from femur to tarsus, and total): I 1.75+0.8+1.5+1.15+0.55=5.75; II 1.4+0.7+1.23+0.88+0.47=4.68; III 0.98+0.53+0.69+0.9+0.36=3.46; IV 1.45+0.65+1.23+1.38+0.42=5.13.

General appearance similar to female; male smaller and colouration darker; abdomen creamy white; dark grey chevron with more prominent transverse branches than female. AER slightly procurved, eyes subequal in size; clypeus height equal to AME diameter; medians separated by their diameter; AME separated from ALE by slightly less than 0.5 AME diameter; PER recurved, median eyes larger than laterals; PME separated by 1.5 times their diameter; PME separated from PLE by distance equal to PME diameter. Chelicerae granular with a few scattered long, dark setae over surface; three well separated promarginal teeth, distal tooth smallest, far from fang base on promargin; three retromarginal teeth, close together, not on single base, proximal tooth smallest, median largest. Legs I to IV similar in colouration to females, more compact and stout. Leg spination: tibiae: I *plv* 8 cusps; metatarsi: I *plv* 8, *rlv* 1 cusps, II *plv* 8 cusps; tarsi: I *plv* 8 cusps, II *plv* 5 cusps (Fig. 18); regular leg spines, palpal spines absent. Palp orange brown throughout; small median ventral tibial apophysis; embolus beginning medially in cymbium, curving prolaterally then retrolaterally, with distal terminal, tear-shaped embolus tip; retrolateral hair tuft ventrally on cymbium (Figs 19, 20).

Holotype: ♀ 'NMBA 9087 / S. Africa F.S. Brandfort Florisbad 1250m / 2846S/2605E 20-4 7-8 1988/ L.N. Lotz Pres. traps (9A) // new nr. NMBA08727 // Corinnidae / Trachelinae / *Thysanina absolvo* / HOLOTYPE //' (NMBA # 8727).

Allotype: ♂ 'Ficksburg / 7.iii.1989 / M. Filmer / Bush beating / rocky mountainside // Araneae / Corinnidae / Trachelinae / Thysanina / absolvo ALLOTYPE ♂ / 89/865 det. R. Lyle //' (NCA # 89/865).

Paratypes: 1♀ 'NMBA 6564 / — 7 1990 L.N. Lotz / S. Africa O.F.S. Bloemfontein / Bloemfontein, Grant's Hill / 1490m 2906S/2613E / Pres. traps // new nr. NMBA06227 //' (NMBA # 6227). 1 ♀ 'NMBA 6564 / — 8 1990 L.N. Lotz / S. Africa O.F.S. Bloemfontein / Bloemfontein, Grant's Hill / 1490m 2906S/2613E / Pres. traps // new nr. NMBA06229 //' (NMBA # 6229). 1♀ 'R.S.A., Free State / Deelhoek farm / Bloemfontein district / 28°54'S, 26°07'E / 19.I.2001 / (under rocks in grassland) //' (NCA # 2005/989). 1♀ 'S. Africa; O.F.S.; Florisbad / SE 2826Cc; Mus. Staff / June '85; Pres. traps // new nr. NMBA00739 //' (NMBA # 739). 1♂ 'R.S.A., Free State Province / Erfenis Dam Nature Reserve / 28°30.431'S, 26°48.457'E / 24.II.2006, C. Haddad / At base of *Themeda* grass //' (NCA # 2006/460). 1♂ 'R.S.A., Free State Province / Erfenis Dam Nature Reserve / 28°30.431'S, 26°48.457'E /, 24.II.2006, R. Lyle / Beats, short shrubs //' (NCA # 2006/461). 1♂ 'R.S.A., Free State Province / Erfenis Dam Nature Reserve / 28°30.431'S, 26°48.457'E / 28.II.2006, R. Lyle / Beats, short shrubs //' (NCA # 2006/462). 2♂ 1♀ 'NMBA 10004 / South Africa, FS / Fauresmith, Boschrand 208 / 2956S/2448E, / L Lotz, 21 Mar 2005 / sweeping, beating //' (NMBA # 10004).

Distribution: Distributed in the eastern and central parts of Free State Province, South Africa (Fig. 41).

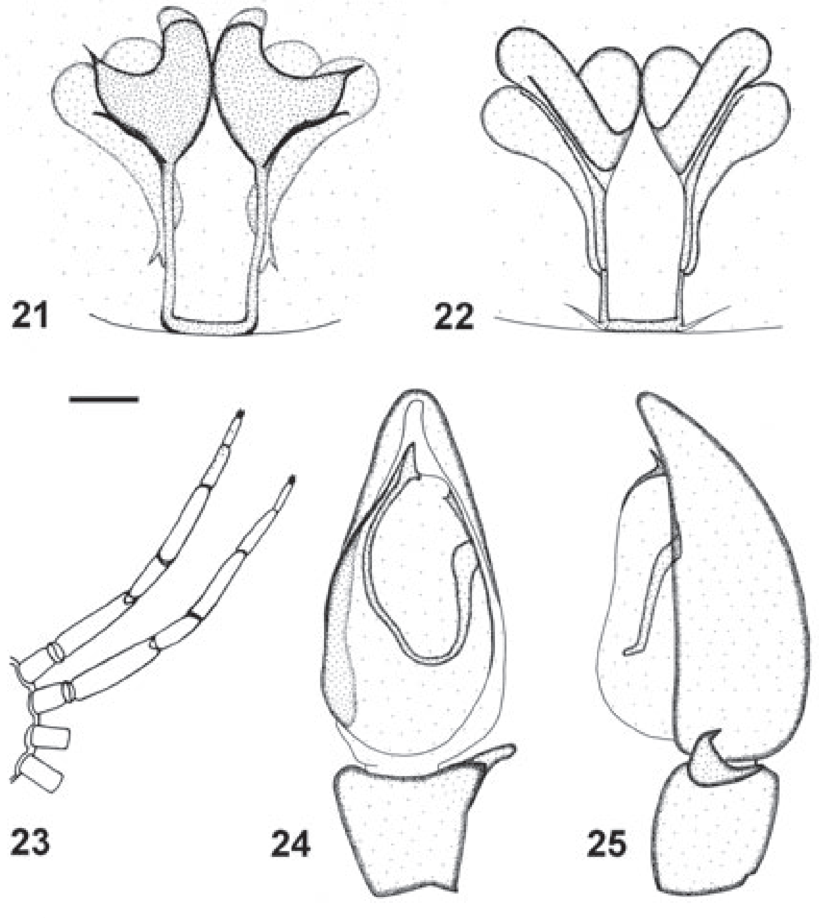
Natural history: This species appears to be associated primarily with the lower strata of grassland ecosystems, and was collected from the ground surface, grass and short shrubs.

Thysanina capensis sp. n.

Figs 21–25

Etymology: This species name is taken from Western Cape Province, South Africa, where the type series was collected.

Diagnosis: This female can be recognised by the V-shaped spermathecae and well sclerotised copulatory openings, at 45 degrees medially in the epigyne. The male can be recognised easily by the short, peg-like embolus distally on the tegulum.



Figs 21–25. *Thysanina capensis* sp. n.: (21, 22) female: (21) epigyne, ventral view, (22) vulva, dorsal view; (23–25) male: (23) schematic representation of cusp arrangement on legs I and II, (24) left palp, ventral view, (25) left palp, retrolateral view. Scale bar (Figs 21, 22, 24, 25) = 0.1 mm.

Description:

Female.

Measurements: CL 1.6–1.65, CW 1.4–1.43, AL 2.6–2.65, AW 1.8–1.93, TL 4.2–4.3, FL 0.08, SL 0.95–0.97, SW 0.78–0.83, AME–AME 0.09, AME–ALE 0.05, ALE–ALE 0.34, PME–PME 0.14, PME–PLE 0.10, PLE–PLE 0.53. Length of leg segments (sequence from femur to tarsus, and total): I 1.73+0.73+1.3+1.08+0.73=5.57; II 1.38+0.65+1.08+0.9+0.73=4.74; III 0.98+0.5+0.68+0.85+0.38=3.39; IV 0.5+0.73+1.35+1.4+0.53=4.51.

Carapace raised slightly to midpoint; relatively steep decline at two-thirds its length; surface smooth, covered in short setae; fovea small, distinct, at two-thirds carapace length; carapace bright orange, paler in colour posterior to midpoint. Ocular region dark orange with black rings around eyes; AER slightly procurved, lateral eyes slightly larger than medians; clypeus height equal to 0.75 PME diameter; AME separated by distance equal to their diameter; AME separated from ALE by 0.5 AME diameter; PER slightly recurved, median eyes slightly larger than laterals; PME separated by distance 1.5 times their diameter; PME separated from PLE by distance equal to PME diameter. Chelicerae bright orange, pale near fang bases; scattered setae on anterior surface; three promarginal teeth; two near fang base, distal tooth largest; third tooth small, far from fang base on promargin; three retromarginal teeth on single base, median tooth largest. Sternum pale orange to light brown, short fine, dark setae scattered throughout. Abdomen broader anteriorly, truncated posteriorly, with branched grey chevron; dorsum mottled, with grey to creamy white undertones; fine setae scattered throughout dorsum. Legs I to IV uniform pale yellow; incomplete grey bands distinct on femora to metatarsi; relatively dense dark setae on metatarsi and tarsi; remaining leg segments with scattered fine, light coloured setae; legs I to IV with uniform incomplete grey bands; femora with two close distal bands, patellae covered almost entirely by band, tibiae and metatarsi with single distal and proximal bands. Regular leg spines, cusps absent; palpal spination: patellae *pl* 1 *do* 1, tibiae *pl* 3 *do* 1, tarsi *plv* 2. Genital area sclerotised, light to dark brown; copulatory opening's ridges at 45° to epigastric fold; spermathecae large, V-shaped (Figs 21, 22).

Male.

Measurements: CL 1.8, CW 1.5, AL 2.08, AW 1.27, TL 3.55, FL 0.13, SL 1.02, SW 0.82, AME–AME 0.08, AME–ALE 0.03, ALE–ALE 0.35, PME–PME 0.13, PME–PLE 0.15, PLE–PLE 0.6. Length of leg segments (sequence from femur to tarsus, and total): I 1.58+0.82+1.29+1.05+0.6=5.34; II 1.28+0.69+1.0+0.85+0.52=4.34; III 0.84+0.48+0.6+0.8+0.52=3.24; IV 1.5+0.7+1.43+1.4+0.41=5.44.

General appearance similar to female; male more robustly built, colouration darker; indistinctive grey chevron on dorsum. AER slightly procurved, lateral eyes larger than medians; clypeus height equal to AME diameter; AME separated by slightly less than their diameters; AME separated from ALE by 0.5 AME diameter; PER slightly recurved, eyes similar in size; PME separated by 1.25 their diameter; PME separated from PLE by 1.5 times PME diameter. Chelicerae granular with a few scattered long, dark setae over surface; three well separated promarginal teeth, subequal in size, distal tooth smallest, median tooth largest; three retromarginal teeth, close together but not on single base, large and subequal in size, distal tooth slightly smaller than others. Legs I to IV uniform yellow, without distinctive bands; more compact and stout than those of female. Leg spination: metatarsi: I *plv* 6, *rlv* 2 cusps; tarsi: I *plv* 1 *rlv* 1cusps (Fig. 23); regular leg spines absent; palpal spination: femora *pl* 1 *do* 3, patellae *pl* 2 *rl* 1, tibiae *pl* 2 *rl* 1 *plv* 1. Palp pale orange throughout; small subtriangular retrolateral tibial apophysis present; tegulum tapering distally, with small, peg-like embolus originating prolaterally at distal end (Figs 24, 25).

Holotype: ♀ 'Lebanon Pine Plantation / Grabouw, W. Cape / Jun.1986 / J.K. Winstanley / Pine / AcCA 1466 // Araneae / Corinnidae / Trachelinae / Thysanina / capensis HOLOTYPE ♀ / 86/468 det. R. Lyle //' (NCA # 86/468).

Allotype: ♂ 'S. Africa: C.P., Ladismith, Gans Kop 136 / 3339S/2101E, Ent. Staff / Various methods, 28 Oct. 1987 // new nr. NMBA 02338 // Araneae / Corinnidae / Trachelinae / *Thysanina capensis* / ALLOTYPE //' (NMBA # 02338).

Paratype: 1♀ 'Lebanon, Western Cape / viii.1985 / J.K. Winstanley / Small pine trees //' (NCA # 86/155).

Distribution: Endemic to Western Cape Province, South Africa (Fig. 41).

Natural history: Specimens were collected from pine plantations and Karoo habitats. This species is likely to occur also in fynbos habitats in Western Cape.

Thysanina gracilis sp. n.

Figs 26–30

Etymology: This species name is Latin for 'slender', which refers to the fine, thin slender embolus of the male.

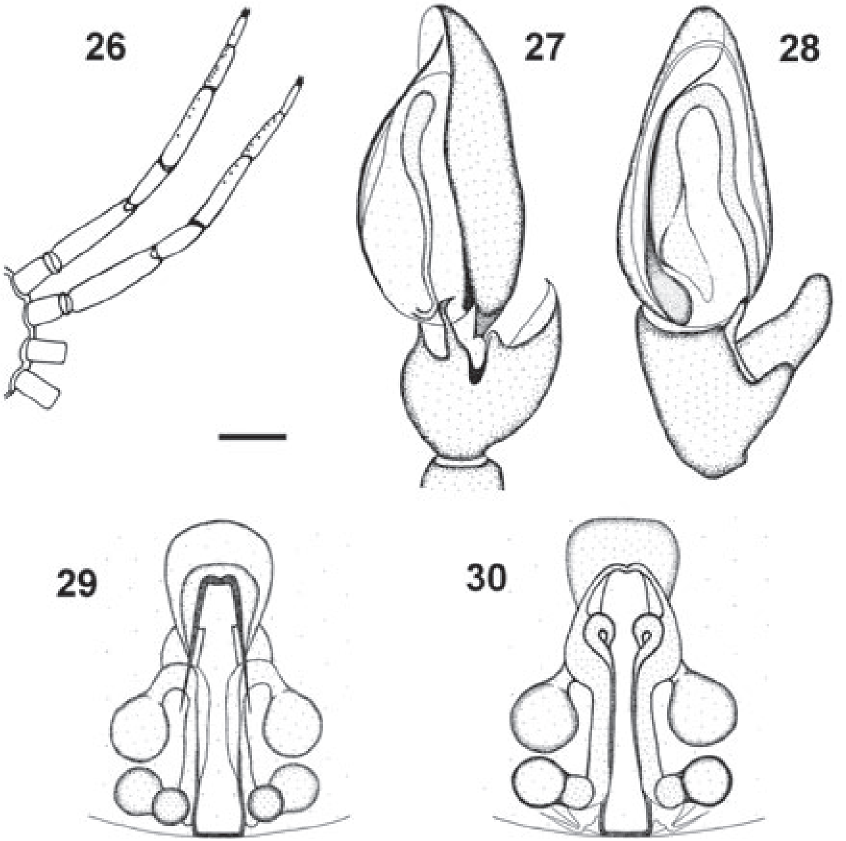
Diagnosis: This species is recognised by the elongated embolus running along the prolateral side of the bulbus. A prominent retrolateral apophysis is found on the tibia, with two smaller apophyses.

Description:

Male.

Measurements: CL 1.1–1.43, CW 0.98–1.28, AL 1.15–1.7, AW 0.8–1.15, TL 2.45–3.0, FL 0.13–0.15, SL 0.69–0.9, SW 0.6-0.78, AME–AME 0.08, AME–ALE 0.03, ALE–ALE 0.32, PME–PME 0.13, PME–PLE 0.11, PLE–PLE 0.52. Length of leg segments (sequence from femur to tarsus, and total): I 1.3+0.63+1.1+0.93+0.6=4.56; II 1.18+0.48+1.05+0.83+0.55=4.09; III 0.88+0.48+0.65+0.8+0.38=3.19; IV 1.4+0.58+1.05+1.2+0.48=4.71.

Carapace evenly high for anterior two-thirds, declining posterior to fovea; surface smooth; fovea small and distinct, situated at two-thirds carapace length; carapace dark orange, paler posteriorly. Ocular region orange to dark brown; AER slightly procurved, lateral eyes slightly larger than medians; clypeus height equal to AME diameter; AME separated by distance equal to their diameter; AME separated from ALE by 0.5 AME diameter; PER slightly recurved, median eyes larger than laterals; PME separated by distance equal to 1.5 times their diameter, PME separated from PLE by 0.5 PME diameter. Chelicerae dark orange, with pale setae scattered on anterior surface; three promarginal teeth, proximal and median teeth largest and subequal in size, distal tooth smallest; two retromarginal teeth on same base, distal tooth largest. Sternum bright orange and smooth, darker near border; short, pale orange setae covering surface, long pale setae near border. Abdomen broader anteriorly, truncated posteriorly; dorsum pale yellow to creamy white;



Figs 26–30. *Thysanina gracilis* sp. n.: (26–28) male: (26) schematic representation of cusp arrangement on legs I and II, (27) left palp, ventral view, (28) left palp, retrolateral view; (29, 30) female: (29) epigyne, ventral view, (30) vulva, dorsal view. Scale bar (Figs 27–30) = 0.1mm.

dark grey chevron with well pronounced transverse branches. Legs I to IV compact and thickened; pale orange to creamy yellow, with dark brown complete bands on femora to metatarsi; short dark setae ventrally situated on tibiae, metatarsi and tarsi; uniform grey band arrangement on femora, with two close distal bands, patellae covered almost entirely by single band, tibiae and metatarsi with single distal and proximal bands. Leg spination: tibiae: I *plv* 4 cusps, II *plv* 3 cusps; metatarsi: I *plv* 9 cusps, II *plv* 7 cusps; tarsi: I *plv* 1 cusps (Fig. 26); regular leg spines absent; palpal spination: femora *pl* 2, patellae *pl* 1 *do* 1, tibiae *pl* 4 *rl* 1. Palp orange-brown throughout; prominent spoon-shaped dorsal retrolateral tibial apophysis with two smaller retrolateral apophyses; embolus wire-like, originating proximally, running along prolateral side of bulbus, curving distally (Figs 27, 28).

Female.

Measurements: CL 1.23, CW 1.2, AL 2.55, AW 1.8, TL 3.8, FL 0.11, SL 0.88, SW 0.75, AME–AME 0.14, AME–ALE 0.04, ALE–ALE 0.38, PME–PME 0.15, PME–PLE 0.12, PLE–PLE 0.455. Length of leg segments (sequence from femur to tarsus and total):

I 1.35+0.68+1.08+0.88+0.5=4.49; II 1.1+0.6+0.85+0.78+0.43=3.76; III 0.98+0.5+0.58+0.63+0.33=3.02; IV 1.33+0.55+1.05+1.2+0.4=4.53.

General appearance similar to male, female larger; dark grey dorsal chevron with short branches pointing sharply towards spinnerets; branches of chevron close to main vein of chevron. AER straight, median eyes larger than laterals; clypeus height equal to 0.5 AME diameter; AME separated by distance equal to their diameter; AME separated from ALE by distance equal to 0.5 ALE diameter; PER slightly recurved, median eyes larger than laterals; PME separated by distance equal to 1.5 times their diameter; PME separated from PLE by distance equal to PME diameter. Chelicerae dark orange, with black setae scattered on anterior surface; three promarginal teeth, proximal and median teeth largest, subequal in size, distal tooth smallest; two retromarginal teeth on same base, distal tooth largest. Legs I to IV less compact, more slender than those of male; band arrangement similar. Regular leg spines, cusps absent; palpal spination: femora *pl* 3 *do* 3, patellae *pl* 1 *do* 1, tibiae *pl* 1, tarsi *plv* 1. Genital area sclerotised, dark brown; copulatory openings laterally off-centre of epigyne; spermathecae globular, terminal receptacles bilobed (Figs 29, 30).

Holotype: ♂ 'R.S.A., Northern Cape Province / Geelkoppies farm / Schmidtsdrift district / 24.I.2002, C.R. Haddad / (light trap) // Araneae / Corinnidae / Trachelinae / Thysanina / gracilis HOLOTYPE ♂ / 2005/990 det. C. Haddad //' (NCA # 2005/990).

Allotype: ♀ 'S. Africa, C.P., Kimberley, Langeberg 138. / Entomol. Staff 2855S, 2436E / Pitfall traps. Apr.–Aug. 1987 // new nr. NMBA01875 // Corinnidae / Trachelinae / *Thysanina gracilis* / ALLOTYPE //' (NMBA # 01875).

Paratype: 1♂ 'NAMIBIA / Scorpion Mine Site / 27°49'S, 16°36'E / 23–29.VII.1997, E. Griffin / Preservation pitfall traps //' (SMN # 43763).

Distribution: Distributed in Northern Cape Province, South Africa, and in southern Namibia (Fig. 41).

Natural history: This species occurs in arid and semi-arid habitats, and was primarily collected from the soil surface.

Thysanina similis sp. n.

Figs 31–35

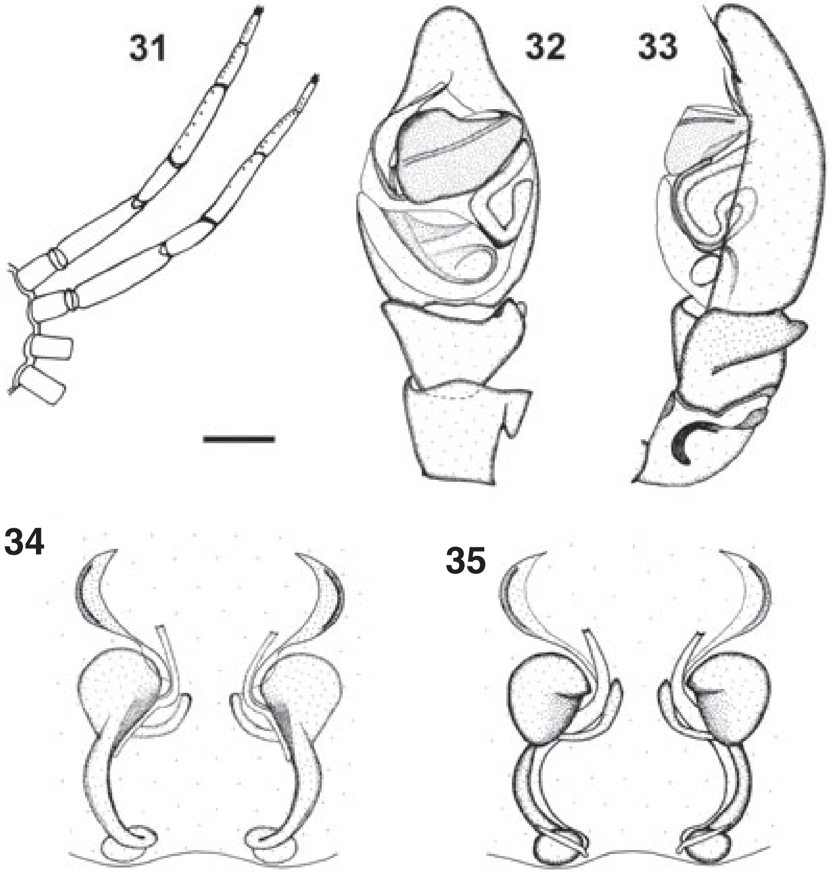
Etymology: This species name is Latin for 'similar', and refers to the similarities found in the genitalia of this species and *T. transversa*.

Diagnosis: This species can be recognised by its narrow semi-circular hoods of the epigyne. It is unique compared to *T. transversa*, which has S-shaped spermathecae compared to the globular spermathecae of *T. similis*. The palp of *T. similis* has a short embolus and rounded tibial apophysis and a more prominent patellar apophysis than *T. transversa*. In comparison to the other species, *T. similis* females have very faded or no chevron markings on the abdomen. This is one of two species in the genus that has regular leg spines, in males and females, in addition to cusps in males.

Description:

Male.

Measurements. CL 1.28–1.55, CW 1.23–1.48, AL 1.8–1.88, AW 1.23–1.35, TL 3.0–3.5, FL 0.08–0.1, SL 0.85–0.88, SW 0.75–0.83, AME–AME 0.08, AME–ALE 0.05, ALE–ALE 0.30, PME–PME 0.12, PME–PLE 0.10, PLE–PLE 0.49. Length of leg



Figs 31–35. *Thysanina similis* sp. n.: (31–33) male: (31) schematic representation of cusp arrangement on legs I and II, (32) left palp, ventral view, (33) left palp, retrolateral view; (34, 35) female: (34) epigyne, ventral view, (35) vulva, dorsal view. Scale bar (Figs 32–35) = 0.1 mm.

segments (sequence from femur to tarsus, and total): I 1.55+0.7+1.25+0.88+0.63=5.01; II 1.33+0.6+1.08+0.95+0.53=4.49; III 0.93+0.38+0.65+0.78+0.25=2.99; IV 1.63+0.55+ 1.15+1.35+0.53=5.21.

Carapace evenly high, declining sharply at three quarters carapace length; surface smooth, short setae scattered throughout; fovea short, narrow, at two-thirds carapace length; carapace bright orange, dark brown near border. All eyes with dark brown rings; AER strongly procurved, laterals 1.5 times the diameter of medians; clypeus height equal to AME diameter at ALE, equal to slightly more than ALE diameter at AME; AME separated by distance equal to their diameter, AME separated from ALE by 0.5 ALE diameter; PER slightly recurved, lateral eyes slightly larger than medians; PME separated by 1.25 times their diameter, PME separated from PLE by distance equal to PLE diameter. Chelicerae dark brown, lighter at base; scattered long black setae over surface; three well separated promarginal teeth, median tooth largest, distal smallest; two closely situated retromarginal teeth, distal tooth largest. Sternum orange, dark brown at border; surface smooth with scattered short setae. Abdomen broader anteriorly, truncated posteriorly; chevron present, with thin lateral line ending at midpoint of abdomen, unattached transverse branches spread across abdomen; similar to male of *T. transversa*. Legs I to IV compact, robust; uniform in colour, pale yellow to orange; dense setae ventrally on metatarsi and tarsi of legs I to IV; legs I to IV with uniform grey band arrangement; femora with two close distal bands, patellae covered almost entirely by band, tibiae and metatarsi with single distal and proximal bands. Leg spination: femora: I and II *pl* 1 *do* 1, III *pl* 1 *do* 1 *rl* 1, IV *do* 1 *rl* 1; patellae spine-less; tibiae: I *plv* 6 cusps, II *plv* 3 cusps, IV *vt* 2; metatarsi: I *plv* 7 cusps, II *plv* 8 cusps, III *plv* 1, IV *pl* 1 rl 1; tarsi: I *plv* 5 cusps, II *plv* 3 cusps (Fig. 31); palpal spination: femora *pl* 1 *do* 3, patellae *rl* 1, tibiae *pl* 2 *do* 1, tarsi *pl* 1. Palp orange-brown throughout; retro-lateral tibial apophysis with a smaller apophysis; prominent retrolateral patellar apophysis; embolus twisted behind a hardened sclerite, similar to *T. transversa* (Figs 32, 33).

Female.

Measurements: CL 1.43–1.5, CW 1.23–1.33, AL 2.1–2.25, AW 1.0–1.5, TL 3.5–3.7, FL 0.08–0.1, SL 0.88–0.93, SW 0.75–0.8, AME–AME 0.04, AME–ALE 0.03, ALE–ALE 0.28, PME–PME 0.11, PME–PLE 0.08, PLE–PLE 0.46. Length of leg segments (sequence from femur to tarsus, and total): I 1.28+0.65+1.03+0.85+0.53=4.34; II 1.05+0.58+0.88+0.8+0.45=3.76; III 0.78+0.33+0.55+0.8+0.45=2.91; IV 1.4+0.55+1+1.28+0.3=4.53.

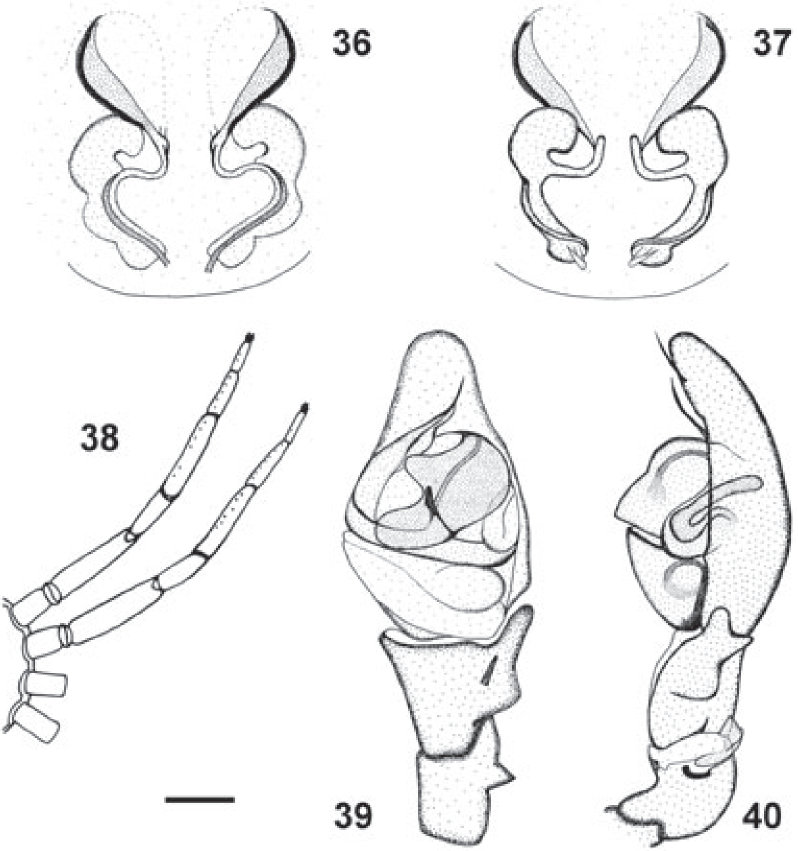
Similar in appearance to male, female larger, colouration lighter; chevron absent; three grey spots dorsally, two situated at pedicel to third abdomen length, third marking medially from two thirds abdomen length to spinnerets. All eyes surrounded by dark rings; AER slightly procurved, clypeus height equal to 0.75 AME diameter; anterior eyes subequal in size; AME separated by 0.5 their diameter, AME separated from ALE by 0.25 AME diameter; PER slightly recurved, eyes subequal in size; PME separated by distance equal to their diameter, PME separated from PLE by distance equal to 0.75 PME diameter. Chelicerae dark orange, with black setae scattered on anterior surface; three promarginal teeth, proximal and median teeth largest, subequal in size, distal tooth smallest; two closely situated retromarginal teeth, subequal in size. Legs I to IV similar in colouration to male, with similar band arrangement; legs less compact, thinner than male. Leg spination: femora: I *pl* 1, IV *rl* 1; palpal spination: patellae *pl* 1 *do* 1, tibiae *pl* 2 *do* 2, tarsi *pl* 2 *plv* 1 *rlv* 1 *vt* 2. Genital area well sclerotised, dark brown to orange; copulatory openings anterior to midpoint of epigyne, located within narrow semi-circular hoods; spermathecae globular, with terminal receptaculae situated in posterior half of epigyne extending to epigastric fold (Figs 34, 35).

Holotype: ♂ 'California Academy of Sciences / TANZANIA: Tanga: W Usambara / Mtns.: Mazumbai, station / 4°48.5'S; 38°30'E 1500m / 10—20.xi.1995 around buildings / C.E. Griswold, N. Scharff, D. Ubick //' (CAS).

Paratypes: 2♀ 'California Academy of Sciences / TANZANIA: Tanga: E Usambara / Mtns.: Amani. Forest / 5°5.7'S; 38°38'E 950m el. / 27.x—9.xi.1995 / C.E. Griswold, N. Scharff, D. Ubick //' (CAS). 1♂ 'California Academy of Sciences / TANZANIA: Tanga: E Usambara / Mtns.: Amani, Mbomole Hill / 5°5.7'S; 38°37'E 1000m el. / 5—8 .xi.1995 / C.E. Griswold, N. Scharff, D. Ubick //' (CAS).

Distribution: Currently known only from the Usambara Mountain range, situated in the north-eastern part of Tanzania (Fig. 41).

Natural history: This is the only species that has a distinctive preference for forest habitats. Little is known of its microhabitat preferences.



Figs 36–40. *Thysanina transversa* sp. n.: (36, 37) female: (36) epigyne, ventral view, (37) vulva, dorsal view; (38–40) male: (38) schematic representation of cusp arrangement on legs I and II, (39) left palp, ventral view, (40) left palp, retrolateral view. Scale bar (Figs 36, 37, 39, 40) = 0.1 mm.

Thysanina transversa sp. n.

Figs 2–10, 36–40

Etymology: This species name is Latin for 'oblique', and refers to the oblique alignment of the male embolus.

Diagnosis: This species is recognised by the oblique alignment of the male embolus and the semi-circular hoods covering the copulatory openings. A prominent retrolateral apophysis is found on the tibia, with two smaller apophyses. The patella has a subtriangular retrolateral apophysis. The epigyne has well sclerotised, curved copulatory openings that extend into the S-shaped spermathecae. For differences to *T. similis*, see description of the latter.

Description:

Female.

Measurements: CL 1.63–1.75, CW 1.23–1.6, AL 2.0–3.0, AW 1.23–2.9, TL 3.6–4.8, FL 0.75–1.0, SL 1.03–1.1, SW 0.85–0.9, AME–AME 0.08, AME–ALE 0.03, ALE–

ALE 0.32, PME–PME 0.13, PME–PLE 0.10, PLE–PLE 0.58. Length of leg segments (sequence from femur to tarsus, and total): I 1.65+0.78+1.3+1.13+0.7=5.56; II 2.7+0.7+1.08+0.8+0.58=5.86; III 1.05+0.53+1.25+0.78+0.45=4.06; IV 1.88+0.5+0.55+1.38+0.55=4.86.

Carapace rising gradually to midpoint, declining sharply posterior to midpoint; surface smooth, short, fine setae scattered throughout (Fig. 3); fovea short, indistinct, just posterior to midpoint; carapace bright orange to brown, border dark brown. Ocular region dark orange; all eyes surrounded by dark brown rings; AER procurved, lateral eyes larger than medians; clypeus height equal to 0.75 AME diameter at AME, 0.5 ALE diameter at ALE; AME separated by a distance equal to 0.75 their diameter, AME separated from ALE by distance equal to 0.25 AME diameter; PER slightly recurved, median eyes slightly larger than laterals; PME separated by distance slightly larger than their diameter, PME separated from PLE by distance equal to PLE diameter. Chelicerae dark orange to brown, slightly paler at fang base; promargin with three widely spaced teeth, distal tooth smallest, proximal tooth largest; retromargin with two closely placed teeth, subequal in size. Sternum pale orange to brown, darker around border; short, fine setae and long dark setae scattered throughout. Abdomen broader anteriorly, truncated posteriorly; dorsum pale yellow to white; chevron grey with prominent branches; no lateral line on dorsum; scattered long setae throughout. Legs I to IV uniform orange to brown; dense setae ventrally on metatarsi and tarsi; fine pale setae present on all segments; all four legs with scattered short, dark setae. Leg spination: femora: I *pl* 1 *do* 1, II *pl* 1 *do* 1, III *do* 1, IV *do* 1 *rl* 1; tibiae: IV *vt* 1; metatarsi: IV *pl* 1 *rl* 1; palpal spination: patellae *pl* 1; tibiae *pl* 2 *do* 2; tarsi *pl* 3 *do* 1 *plv* 1 *rlv* 1. Genital area strongly sclerotised, dark brown to orange in colour; copulatory openings situated in anterior half of epigyne, covered by semi-circular hoods; S-shaped spermathecae relatively small, with terminal receptaculae situated in posterior half of epigyne, not extending to epigastric fold (Figs 36, 37).

Male.

Measurements: CL 1.23–1.98, CW 1.55–1.73, AL 1.8–2.35, AW 1.23–1.48, TL 3.55–3.8, FL 0.08–0.13, SL 0.93–1.05, SW 0.93–1.0, AME–AME 0.11, AME–ALE 0.05, ALE–ALE 0.39, PME–PME 0.13, PME–PLE 0.15, PLE–PLE 0.67. Length of leg segments (sequence from femur to tarsus, and total): I 2.03+0.95+1.73+0.58+0.78=6.07; II 1.55+0.8+1.78+1.15+0.63=5.91; III 1.2+0.6+0.83+1.05+0.48=4.16; IV 1.75+0.73+1.55+1.78+0.5=6.31.

General appearance similar to female; male smaller with more compact abdomen than female; chevron darker with lateral line that ends at midpoint of abdomen. Eye region dark orange; all eyes surrounded by black rings; AER very slightly recurved, lateral eyes larger than medians; clypeus height 1.5 times AME diameter; AME separated by distance equal to their diameter, AME separated from ALE by distance equal to 0.75 AME diameter; PER recurved, eyes subequal in size; PME separated by distance equal to 1.75 their diameter, PME separated from PLE by distance equal to 1.5 times PME diameter. Chelicerae with scattered black setae on anterior surface; promargin with three teeth, distal tooth smallest, median and proximal teeth subequal in size; retromargin with two closely placed teeth, distal tooth slightly larger than proximal. Legs I to IV more robust and compact than those of female. Leg spination: femora: I *pl* 1 *do* 1, II *pl* 1 *do* 1, III *pl* 1 *do* 1 *rl* 1–2, IV *do* 1 *rl* 2–4; tibiae: I *plv* 6 cusps, II *plv* 7 cusps, IV *vt* 1–2; metatarsi: I *plv* 5 cusps, II *plv* 7 cusps, III *pl* 1 *plv* 1, IV *pl* 1 *rl* 1; tarsi: I *plv* 2 cusps, II *plv* 1 cusps (Figs 5–8, 38); palpal spination: patellae *do* 2 *rl* 2 *rlv* 1, tibiae *do* 3 *pl* 1 *rl* 1, tarsi *pl* 2 *rl* 1. Palp orange throughout; prominent retrolateral tibial apophysis with two smaller median apophyses; triangular retrolateral patellar apophysis present; embolus twisted behind a sclerotised cover (Figs 39, 40).

Holotype: ♀ 'SOUTH AFRICA. / KWAZULU/NATAL. / Pongola Bush Reserve. / 27°19'S 30°29'E. / Paulpietersburg. / L Lotz. 3-XII-1994. // new nr. NMBA06737 // Corinnidae / Trachelinae / *Thysanina transversa* / HOLOTYPE //' (NMBA # 6737).

Allotype: ♂ 'Lajuma / 23°02.255'S, 29°26.669'E / 25.xi.2004 / tree beating, *Eugeria natalitia* / M. Mafadza // Araneae / Corinnidae / Thysanina / transversa ♂ / 2005/1894 det. C. Haddad//' (NCA # 2005/1894).

Paratypes: 1♂ 1♀ '1 Whitnall street, Grahamstown / 22.x.1978 / P. Croeser / in sac web on leaf in lemon / tree //' (NCA # 82/376). 2♂ 1♀ 'Schagen / 15 km N.W / of Nelspruit / 19.viii.1997 / M. van den Berg / on macadamia tree //' (NCA # 98/179). 4♂ 2♀ 'Schagen, 15km / N.W. of / Nelspruit / 7.x.1997 / M. van den Berg / on macadamia tree //' (NCA # 98/178). 1♂ 'South Africa, KwaZulu-Natal / Greater St. Lucia Wetlands Park / False Bay Park / 14.X.2004, J. Esterhuizen / Tsetse fly traps //' (NCA # 2005/184).

Other material examined: SOUTH AFRICA: *KwaZulu-Natal*: 2♂ Ndumo Game Reserve, Pongola River floodplain, near pump, riverine forest, 26°54.323'S:32°19.435'E, 27.vi.2006, beats, short shrubs, A. Honiball & E. Leuwin (NCA 2006/1229). *Limpopo*: 1♀ Lajuma, 23°02.257'S:29°26.661'E, 5.xi.2004, tree beating, *Falcatus*, M. Mafadza (NCA 2005/2032); 1♂ Sovenga Hill, near Polokwane, 23°53'S:29°44'E, 15.xi.2004, short forest, tree beating, M.A. Modiba (NCA 2005/1865); 1♂ same data (NCA 2005/1866); 1♂ same data (NCA 2005/1867); 1♂ same data (NCA 2005/1868); 1♂ same locality, 2.xii.2004, short forest, tree beating, M.A. Modiba (NCA 2005/1876); 1♂ same locality, 4.xii.2004, short forest, tree beating, M.A. Modiba (NCA 2005/1877); 1♂ same data (NCA 2005/1878); 1♀ same locality, 27.xi.2004, short forest, active search, M.A. Modiba (NCA 2005/1874); 1♂ same data (NCA 2005/1875); 1♂ 1♀ same locality, 25.xi.2004, tall forest, tree beating, M.A. Modiba (NCA 2005/1869); 1♂ 1♀ same data (NCA 2005/1870); 1♀ same data (NCA 2005/1871); 1♀ same data (NCA 2005/1872); 1♂ 2 juv. same data (NCA 2005/1873). *Western Cape*: 1♀ Diepwalle Forest Station, 22km NE Knysna, 33°57'S:23°10'E, 10–13.i.1985, indigenous forest, C. Griswold & T. Meikle-Griswold (NMSA).

Distribution: Widely distributed in Western Cape, Eastern Cape, KwaZulu-Natal, Limpopo and Mpumalanga provinces of South Africa (Fig. 41).

Natural history: This species was collected primarily from the foliage of shrubs and trees in a variety of woodland and forest habitats, at altitudes varying from 10 m a.s.l. (St Lucia) to 1700 m a.s.l. (Soutpansberg mountains).

DISCUSSION

The continuous changes in the taxonomy of spiders has lead to an urgent need to examine previously collected material for reclassification and, in many cases, the description of new species. The revision of the genus *Thysanina* emphasises this, as most previously collected specimens were identified to family level only, and were misplaced in the Clubionidae. Due to the examination of the limited material available, five new species were described in this previously monotypic genus.

Species in the Trachelinae share a number of characteristics (e.g. strongly sclerotised bodies, presence of leg cusps, in males at least, and the general absence of leg spines), but variations are found. The genus *Thysanina* has a number of shared characteristics with *Trachelas* in terms of general somatic morphology. Colouration and markings are relatively stable in *Thysanina*, described above, but are considerably more variable in *Trachelas*, which usually have a red-brown carapace with a grey to black abdomen compared to the yellow-brown carapace with grey chevron marking of *Thysanina*. The American genus *Meriola* Banks, 1895 is similar in appearance to *Thysanina* with a

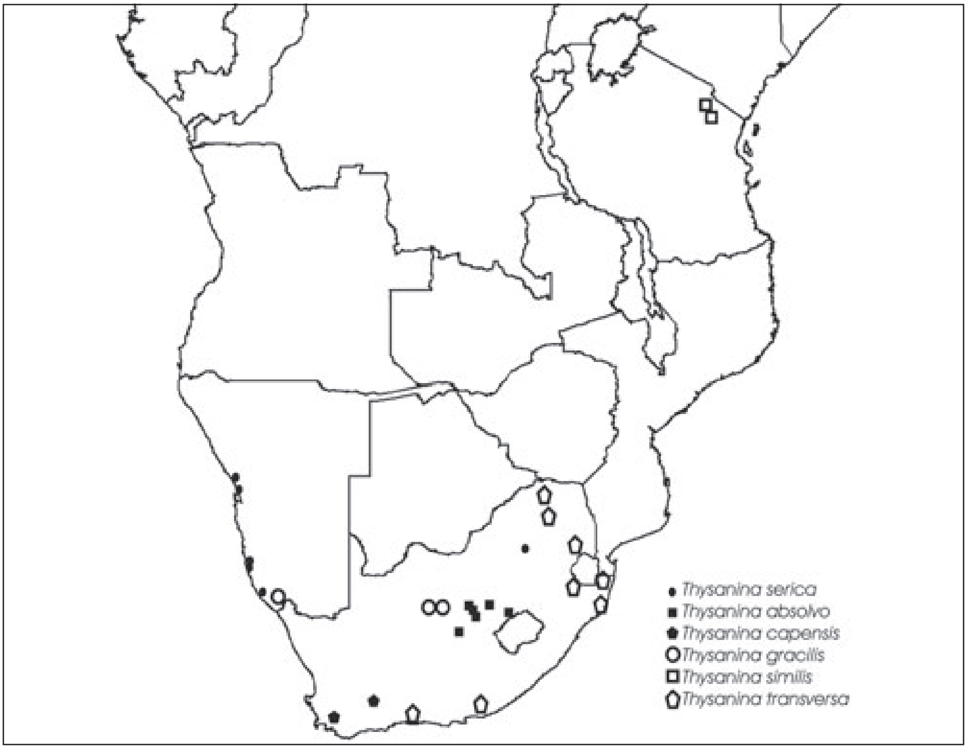


Fig. 41. Distribution of *Thysanina* in the Afrotropical region.

slight variation in the texture of the abdomen, which is pitted in *Meriola* (Platnick & Ewing 1995) and smooth in *Thysanina*. The eye arrangement and chevron markings are similar. The cusps of male *Meriola* are elongated with a narrower, rounded point and indented base (Platnick & Ewing 1995, figs 2, 3), compared to the male *Thysanina,* which have a broad base with a relatively sharp point (Fig. 9).

While the presence of ventral leg cusps in males and absence of cusps in females is consistent amongst all species in the genus, an absence of leg spines is not. Two species, *T. similis* and *T. transversa*, have a limited number of regular leg spines in both sexes, but these are still very few compared to those found in the Corinninae and Castianeirinae. This indicates that leg spines may persist in some species of certain tracheline genera. Platnick and Ewing (1995) also reported that several species of the American genus *Meriola* Banks, 1895 have leg spines on the anterior femora, while most species in the genus lack spines. This variation in the presence of leg spines may yet display itself in other Afrotropical genera too, and requires further investigation. For one, Afrotropical *Cetonana* Strand, 1942 species all appear to have distinctive leg spines in both sexes, in addition to cusps in males, a character that may support the monophyly of this particular genus.

Regarding genitalic morphology, suggesting that a distinctive pattern of genitalic evolution is evident in *Thysanina* would be premature. For example, regarding male palpal morphology, four of the species (*absolvo*, *serica*, *similis* and *transversa*) have a broadly coiled embolus originating prolaterally and distally on the tegulum. This contrasts from a proximal prolaterally originating wire-like embolus in *gracilis*, and a short, distal peg-like embolus in *capensis*. Based on the current data presented in this paper, several species are known from very few specimens and localities. This has been compounded by the fact that large areas within the Afrotropical region have not been sampled or have only been poorly sampled, as well as the large number of unidentified tracheline specimens in museum collections. It is, therefore, likely that additional species remain undescribed, which could fill the gaps in determining the pattern of genitalic evolution and biogeography of the genus.

An earlier paper by Platnick (2001) on the genus *Paccius*, in which five new species were described from a single Madagascan reserve, as well as the current paper, exemplify the currently poor knowledge of the systematics of Afrotropical tracheline sac spiders, and highlights the urgent need for further studies to determine more accurately the diversity of the group in the region. This revision is the first step in providing updated information on the group, with a long-term aim of resolving the phylogenetic and biogeographical relationships of the region's fauna.

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